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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/057,406	04/08/1998	HARALD WERENICZ	94-36-3-US-D	6379

7590 09/14/2004

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EXAMINER	
AFTERGUT, JEFF H	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/057,406	WERENICZ ET AL.
	Examiner	Art Unit
	Jeff H. Aftergut	1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-12,33-36,38-42,44 and 46-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-12,33-36,38-42,44 and 46-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6-28-2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 2-12, 33-36, 38-42, 44, 46-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maletsky et al '202 in view of E.P. 315,013 further taken with Smith et al and optionally further taken with Buell.

The reference to E.P. '013 suggested that it was known at the time the invention was made to coat a nonwoven substrate with a thin film (page 4, lines 1-4 of the translation, a coating weight of 15-30 g/m^2 is a thin layer) of hot melt adhesive (which included the use of amorphous thermoplastics therein abstract of the disclosure, page 3, lines 10-11 of the translation) in order to provide a barrier film for a disposable diaper. The film was stated as having been extruded from a "surface nozzle" (page 5, lines 10-13 of the translation). The reference did not expressly state that the nozzle was not in contact with the nonwoven web, however the coating was clearly applied to a nonwoven web. The reference did suggest, however that thicknesses on the order of several microns in thickness were desired by describing the coating weight as being between 15-30 g/m^2. the reference made it clear that those skilled in the art at the time the invention was made knew is was desirable to provide a thin coating upon a nonwoven wherein the coating was continuous and pinhole free. Note that the coating was a liquid barrier film but that it allowed for passage a vapor there through. If holes in the film had been acceptable, then the film would not have sufficed as a liquid barrier (at page 9, lines 11-14 of the translation, the reference to E.P. '013 expressed the desirability of a

continuous film for use as the moisture barrier). With respect to the use of the "surface nozzle", the applicant is advised that the "gap" for which their own films are "suspended" is as small as .5 mm (about 19 mils) and thus the exit of the nozzle would have been understood to have been close to the surface of the substrate. The reference failed to make mention of the specific complex viscosity of the coating composition in the coating operation (i.e. the reference did not suggest that the hot melt based upon the amorphous thermoplastic composition had the requisite complex viscosity of the claims). The applicant is more specifically referred to the translation of the reference at page 3, lines 7-11, page 4, lines 1-4, page 5, lines 10-13, page 8, lines 9-13, Figure 2. the reference failed to make mention of the complex viscosity of the hot melt coated (although the reference suggested the use of hot melts including ATP, amorphous thermoplastics) and additionally failed to make mention of the spacing employed between the nozzle and the surface (note that the reference descried a continuous thin pinhole free coating upon a nonwoven and one would have expected that such would have been applied without contact with the nonwoven as the fibers of the same would tend to break the film apart upon application).

Those skilled in the art of making a diaper would have readily appreciated that hot melt adhesive compositions which had the window of complex viscosity as defined by the claim would have been employed by E.P. '013 in light of the reference to Maletsky et al '202. More specifically, reference to Maletsky et al '202 describes hot melt adhesive compositions which would have been useful an operation for providing a coating to a nonwoven in the manufacture of a disposable diaper. More specifically,

Maletsky et al '202 suggested that thin pinhole free films would have been extrusion coated (coated from an extruder) upon nonwovens wherein the adhesive composition included compositions which were the same as appellant's disclosed compositions (amorphous polyolefin and VESTOPLAST, see example 1 and Table B where the use of the amorphous thermoplastics were recognized as having soft hand and excellent ease of application and the VESTOPLAST was recognized as having soft hand and good ease of application, note that the reference to E.P. '013 suggested the use of amorphous thermoplastic and that such was likewise suggested by Maletsky and that the appellant's themselves chose to use amorphous thermoplastic hot melts as well as VESTOPLAST (an amorphous thermoplastic material, see page 8, line 32-page 9, line 5 and page 10, lines 11-23 of the disclosure, for example). The same compositions described by Maletsky et al '202 must have the same properties of complex viscosity due to the intrinsic nature of the material. The reference to Maletsky '202 suggested that one skilled in the art would have applied thin coatings of 0.65-1.5 mils in thickness upon the nonwoven. Additionally, the reference suggested that those skilled in the art would have applied the coating at temperatures between 300-500 degrees F (which is 149-260 degrees C) and that the viscosity of the polymer would have lied between 40-1500 poise in the operation, see column 5, lines 52-column 6, line 6. Note that in example 1 the viscosity of the amorphous thermoplastic composition is measured to be 110 poise. The reference made it clear that those skilled in the art at the time the invention was made would have employed hot melt adhesives in a diaper construction which met the complex viscosity requirements of appellant's claimed invention (note that use of the

same hot melt composition would have necessarily had the same complex viscosity). The reference failed to make mention of the use of a gap between the nozzle and the nonwoven surface being coated in E.P. '013. note that Maletsky throughout the disclosure does state that the coatings would have been applied via an extrusion operation.

However, providing a thin film onto a substrate by coating a hot melt composition from an extrusion die typically included the spacing of the die tip from the substrate (so that an adhesive film spanned the region between the die tip and the substrate) as evidenced by Smith et al. More specifically, Smith et al suggested that coating of substrates with olefin polymers was frequently performed via a hot melt extrusion process which involved melting the polymer, extruding the polymer through a slit die to form a molten film of the polymer and depositing the molten film onto the substrate (i.e. there was a spanning of the molten polymer film between the die exit and the substrate), see column 1, lines 26-34. the reference to Smith et al suggested that thin coatings of .25-10 mils were possible using this technique. Additionally, the coatings in Smith were stated to have been applied to fabric materials. Clearly, the reference to Smith et al suggested that those skilled in the art at the time the invention was made would have readily appreciated that the thin film applied to the nonwoven in E.P. '013 which was applied from a surface nozzle of an extruder, would have included the extrusion of the thin film from the slit nozzle and the application of the film upon the nonwoven substrate (where the film spanned the gap between the exit of the slit nozzle and the substrate) as such was well recognized as the conventional manner for

applying thin films of hot melt materials upon substrates at high rates of speed as evidenced was known by Smith et al. it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the conventional hot melt coating techniques of Smith et al as such were known for application of thin films upon substrates including fabrics and papers in the processing of E.P. '013 where an extrusion device was used to apply a thin film coating of a hot melt upon a nonwoven wherein the compositions employed for application onto the substrate would have included hot melts of amorphous thermoplastics (as suggested by E.P. '013) as well as the specific hot melts described by Maletsky (to provide thin barrier films Maletsky suggested that ATP was useful as well as VESTOPLAST).

Regarding the specific dependent claims, the applicant is advised that one skilled in the art would have determined the specified gap via routine experimentation which was a result effective variable which was dependent upon the degree of adhesion one wished to attain. Note that the reference to Maletsky suggested additional traditional polymers useful including block copolymers and EVA (which was suggested by E.P. '013). The particular selection of the specific hot melt selected would have been dependent upon the desired characteristics one wished to attain in the finished end product. Additionally, note that the applicant has previously established that there was a relationship between the coat weight and the thickness of the coating and at coat weights of 15-30 g/m^2 the reference to E.P. '013 suggested that one would have attained the specified thickness for the coatings. Additionally, the reference to Smith suggested the specified thicknesses for the coatings (on the order of 10 microns in

thickness). Note that a slit die typically included a shim therein and such is taken as conventional to the art of extrusion.

Regarding the newly added claimed, the applicant is advised that the reference to Maletsky suggested that conventionally a hot melt adhesive included a tackifying resin such as the hydrocarbon resin Estotac H-130 (which is a known tackifier from Eastman Chemical Products) as well as the use of plasticizers (see column 5, lines 6-11). One skilled in the art would have understood that conventional hot melt adhesives included the use of a resin as well as a tackifier as hot melts usually contain three basic materials (a high molecular weight polymer to provide viscosity to the melt and cohesive strength, a synthetic elastomer to increase tack, elasticity and strength, and a resin (synthetic or natural) to add tack and fluidity and promote wetting action).

While it is believed that the reference to Smith et al suggested that hot melt extrusion such as that performed by E.P. '013 would have necessarily included a spacing between the exit of the slit die, the reference to Buell is cited as further evidence of the same. In Buell, the extrusion of hot melt was applied to a nonwoven wherein the die made contact with the nonwoven web being coated (the exit for the slit is in direct contact with the nonwoven). During such processing, the fibers of the nonwoven break up the adhesive being dispended from the extruder tip and form globules on the surface of the nonwoven web of hot melt adhesive. The applicant is more specifically referred to Figure 2 and column 4, lines 36-47. The reference was unable to achieve a thin film which was a continuous hole free film in such processing but rather the film of hot melt was broken up as the nonwoven was dragged over the die

tip. Clearly, one viewing the same would have understood that in order to process according to E.P. '013 to attain a continuous film which was lacking in holes therein the extruder must have been spaced from the surface of the nonwoven substrate (because if it were in contact with the substrate then the adhesive would have been provided in a discontinuous form as evidenced by Buell). It would have been obvious to one of ordinary skill in the art at the time the invention was made that one skilled in the art would have understood that the extruder of E.P. '013 would have been spaced from the nonwoven surface being coated in order to provide a continuous coating upon the same as evidenced by Buell wherein such processing would have included conventional melt extrusion processing as suggested by Smith et al wherein the hot melt adhesive employed in the operation included those of Maletsky et al for the reasons previously specified.

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over E.P. 315,013 in view of Maletsky et al '202 further taken with Smith et al and optionally further in view of Buell as set forth above further taken with Waggoner or U.K. 688,637.

While the references as set forth above suggested that a gap would have existed between the exit of the extruder and the substrate being coated wherein a film would have spanned this gap, they failed to specify the specific amount of the gap. However, as evidenced by either one of U.K. '637 or Waggoner (Waggoner for example at column 2, lines 44-50 and U.K. 688,637 at page 2, lines 40-58) suggested that those skilled in the art of extrusion coating would have adjusted the gap in order to ensure adequate bonding wherein the spacing of the gap was set to be small in order to ensure that the

film was hot enough to attain good adhesion with the web being coated. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the gap to attain an adequate adhesion of the film exiting the extruder to the substrate as suggested by either one of U.K. 688,637 or Waggoner in the process of extrusion coating a substrate with a hot melt adhesive as set forth above by the combination of E.P. 315,013, Maletsky et al '202 and Smith et al and optionally further in view of Buell.

Response to Amendment

4. The declaration under 37 CFR 1.132 filed July 14, 2004 by Sharf U. Ahmed is insufficient to overcome the rejection of the claims based upon the references of E.P. '013 and Maletsky as set forth in the last Office action because: The declaration does not address the question at hand which is whether one skilled in the art at the time the invention was made would have utilized a hot melt adhesive having the required viscosity. The declaration tested various polymers and provided evidence that different polymers have differing viscosities some of which include polymers which are disclosed as useful in the specification (VESTOPLAST 708) and others which are described by the prior art (EVA is mentioned in E.P. '013 and Epolene (note it is EPOLENE C10 which is described by Maletsky and NOT C17 which was tested by the declarant) and VESTOPLAST APAO which were both suggested by Maletsky). It should be noted, however, that the reference to E.P. '013 broadly suggested the use of amorphous thermoplastics in the hot melt composition and therefore the reference suggested the genus of materials which included those having the required complex viscosity of the

claims. Additionally, the reference to Maletsky suggested that one skilled in the art would have selected a hot melt which included amorphous thermoplastics (see example 1 where the viscosity when measured at the required temperature was 130 poise) and broadly stated that VESTOPLAST was used as the plastic in the hot melt composition without identification of the particular type of VESTOPLAST employed. As one skilled in the art would have been expected to select a material which was suitable for the intended purpose (note that VESTOPLAST 792 is identified as a material which was useful as a hot melt adhesive in woodworking while VESTOPLAST 708 was identified as useful for non-woven and hygienic hot melts, see the description of VESTOPLAST cited herein from http://www.vestoplast.com/Content/Eigenschaften.asp). The applicant is advised that their own information regarding VESTOPLAST included a sheet which stated that the VESTOPLÅST would have been useful as hot melts for nonwoven and hygienic applications as well as woodworking application. As Maletsky was concerned with both a nonwoven application and a hygienic application of the hot melt, one would have understood to select a suitable VESTOPLAST material for the operation and NOT a VESTOPLAST material which was suitable for woodworking operations. As such, while some materials of VESTOPLAST have properties outside the claimed range, one skilled in the art would have been led to select a VESTOPLAST material which was suitable for the application which Maletsky desired and as such would have been led to select VESTOPLAST 708 as a useful VESTOPLAST material.

5. The declaration under 37 CFR 1.132 filed June 28, 2004 by George Brown is insufficient to overcome the rejection of all of the claims based upon E.P. '013 as set

forth in the last Office action because: the declaration did not compare the closest prior art to the claimed invention. The declarant is attempting to show that the process as defined in Figure 2 of E.P. '013 is not operation unless the nozzle 44 is in contact with the web. It should be noted that as envisioned by Maletsky as well as E.P. '013 a suitable polymer for the operation (and it would appear that from Maletsky it is the preferred material to utilize) was amorphous polyolefins. It is therefore necessary for declarant to tent the operation with amorphous thermoplastics. Additionally, the declarant did not specify the gap which was set between the nozzle and the substrate. It should be noted that the gap can be as small as 0.5 mm in the specification. It should also be noted that applicant set up the arrangement such that the web moved from a local below the nozzle to a location above the nozzle in an upward direction while the reference appears to move the web in the opposite direction. Also, applicant MUST test the same arrangement with the nozzle in contact with the web so that it can be confirmed that the operation in E.P. '013 was in fact processing the web in this fashion. Without practicing the process in this manner, it cannot be ascertained if declarant even attempted the process In a manner which was envisioned by E.P. '013 (i.e. it cannot be ascertained whether the experiment performed was useful for it was not operated in a manner which functioned at all, i.e. with the nozzle in contact with the web and then the nozzle spaced from the web a gap which was within the specified range of applicant). As such, the showings are not commensurate in scope with those necessary to show that the reference to E.P. '013 does not operate with the web spaced from the nozzle.

Response to Arguments

6. Applicant's arguments filed June 28, 2004 have been fully considered but they are not persuasive.

The applicant argues that the invention of claim 10 has been defined over the prior art reference to E.P. '013 as there are many different EVA copolymers, amorphous thermoplastic polymers and polyethylene polymers and as evidenced by the declaration to Ahmed these polymers do not all possess the requisite complex viscosity claimed. The applicant is advised that the artisan would have been led to select an amorphous thermoplastic polymer in light of the additional suggestions by Maletsky. Additionally, as addressed above, the VESTOPLAST selected by the artisan would have been a materials which one skilled in the art would have recognized as useful for its intended purpose. While it is correct to state that many different forms of the polymer exist, one skilled in the art would have been expected to select a polymer which was usually intended to be used in applications similar to that performed by E.P. '013 and Maletsky. The VESTOPLAST 792 was typically used in woodworking and furniture applications as a hot melt. The VESTOPLAST 708 was used in hygiene and nonwoven applications as a hot melt. Which one would one of ordinary skill in the art at the time the invention was made have been led to select for the operation? More likely than not one skilled in the art would have chosen the VESTOPLAST 708 which was used for nonwoven and hygiene applications (which is what E.P. '013 and Maletsky are both concerned with) for the operation rather than the VESTOPLAST 792 which was used for woodworking. Applicant's argument in this regard has not been found to be persuasive.

The applicant argues that because the only modification described by E.P. '013 in going from the embodiment described in Figure 3 and that described in Figure 2 is that the application roll 50 was replaced with the nozzle 44, that the reference must teach the nozzle is in contact with the web since the roller must be in contact with the web in order to operate. One skilled in the art would have understood what differences were necessary in order to operate the system with the nozzle and the roller. Note that if the roller is in direct contact with the web, then there is no gap for the polymeric material to be in the process. The roller is not in direct contact with the web but rather has the film of polymeric material disposed between the roller and the web. Likewise, one looking at the prior art as a whole would have understood that the nozzle was not in direct contact with the web as such would have resulted in a break up of the polymeric material and a discontinuous coating as evidenced by Buell. It is undisputed that E.P. '013 desired a continuous and pinhole free coating of the plastic on the nonwoven as to do otherwise would have resulted in an inferior product (one would not have desired holes in the backsheet of a disposable diaper as such would not produce a diaper useful for retaining fluid therein). Applicant has attempted to prove via the declaration by George Brown that the nozzle must be spaced from the substrate, however, the declaration did not test the closest prior art, did not express what the gap size was of the experiment, and did not run the operation with the nozzle in contact with the web (which is believed to result in a discontinuous coating on the web in light of Buell, which is clearly not what was intended by E.P. '013). The applicant's arguments that E.P. '013

must teach that the slot nozzle is in contact with the surface of the web is not persuasive.

Regarding the composition employed by Maletsky, the applicant is advised that one skilled in the art would have selected a suitable form of VESTOPLAST from the literature available. As expressed above, it is noted that there are numerous forms of VESTOPLAST, however one skilled in the art at the time the invention was made would have understood to select one which was useful as a hot melt adhesive for hygiene and nonwoven applications and NOT one which was useful for woodworking and/or furniture construction. It should be noted that the literature submitted by applicant themselves indicated that some forms of VESTOPLAST were useful as woodworking hot melts while others were useful in hygiene and nonwoven applications. One viewing Maletsky and E.P. '013 would have selected a hot melt suitable for the operation and such would have included VESTOPLAST 708. The species of the genus of materials would have been obvious to one of ordinary skill in the art in light of the teachings of the prior art.

The applicant argues also that Maletsky could not form a pinhole free film from VESTOPLAST which was any smaller than 1.5 mil (which applicant has equated to be a weight per area of 38.1 g/m^2). It is not clear where applicant has derived the value from as the density of VESTOPLAST was taken to be 0.87 g/cm^3 (as taken from the literature provided by applicant, which is 870000 g/m^3 and the coating thickness was stated to be 1.5 mils (0.0000381 meters). Using this information, the weight/area of the coating would have been 33.147 g/m^2. In any event, this would appear to be larger than that claimed by applicant, however the applicant is advised that the coating thicknesses

described herein were in examples set forth in Table B of Maletsky and that it would appear that Maletsky envisioned pinhole free coatings on the order of 0.65 mils in thickness. Such a change in thickness with a different polymer solution would have resulted in a change in the order of the coating weight per unit area by greater than half. As such the coating weight per unit area envisioned by Maletsky was clearly within the range defined by applicant in the claims (no greater than 30 g/m^2).

The applicant argues that the reference to Smith did not cure the deficiencies of the other references. The applicant is advised that the reference was not cited to cure any deficiencies in the references but rather to show what those skilled in the art would have understood regarding the nozzle application in E.P. '013 and the extrusion operation of Maletsky. In fact, Smith did suggest that those skilled in the art would have understood that no contact coating would have taken place in the operation as such was the conventional manner for application of hot melt coatings in the art. The applicant focuses on the size of the slot used in the coating operation of Smith, however it is not the specific coating operation which was used as evidence from Smith but rather the use of the state of the art which clearly suggested that hot melt extrusions utilized non-contact coating in the processing. The reference of Smith was not cited to suggest that one employ the nozzle described therein in the process of E.P. '013 and Maletsky, just to suggest and evidence that there would have been a gap between the nozzle exit and the nonwoven in the processing of Maletsky and E.P. '013.

The applicant argues that the Board did not address the reference to Buell and therefore they find no relevance to the same. This is not agreed with. The Board expressly stated that they agreed wholeheartedly with the examiner's position and only added their additional comments in addition to those made by the examine (see the paragraph bridging pages 3-4 of the decision). Thus the Board themselves agreed with the Office interpretation of Buell and the undisputed facts therein which expressed that contact between the nozzle and the nonwoven would have resulted in a break up of the coating on the nonwoven as opposed to a continuous coating (which was desired by E.P. '013). Buell further evidenced that there was a gap between the nozzle and the nonwoven in the operation.

The other rejection previously submitted and affirmed by the Board has been withdrawn in light of applicant's amendment to the claims which requires that a web be coated. The reference suggested that the conformal coating would have been applied to substrates which were of determinate length not indeterminate length.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA

September 12, 2004